

CLAIMS

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3 1. Apparatus including a router having at least one input interface and
4 at least one output interface, said router being coupled to a plurality of content address-
5 able memory banks, each said memory bank being independently responsive to an input
6 value, said input value being responsive to a message capable of being received on one of ^{said at least}
7 said input interfaces, each said memory bank including a routing treatment said router is
8 capable of applying to said message.

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10 2. Apparatus as in claim 1, wherein
11 said apparatus includes a plurality of monolithic integrated devices;
12 each said integrated device including a plurality of content addressable
13 memory banks;
14 each said memory bank within each said integrated device being independ-
15 ently responsive to said input value.

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17 3. Apparatus as in claim 2, wherein each said memory bank within each
18 said integrated device is associated with a selected prefix length of said input value.

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20 4. Apparatus as in claim 2, wherein each prefix length of said input
21 value is associated with at least one said memory bank within at least one of said inte-
22 grated devices.

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2 5. Apparatus as in claim 2, wherein at least one said prefix length is
3 associated with a plurality of said memory banks within at least one of said integrated de-
4 vices.

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6 6. Apparatus as in claim 5, wherein, for said at least one prefix length
7 associated with a plurality of said memory banks within at least one of said integrated de-
8 vices, a set of entries associated with said at least one prefix length are each associated
9 with an independent one of said memory banks, whereby an input value can be rapidly
10 assigned to one of said memory banks for processing.

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12 7. Apparatus as in claim 5, wherein said set of entries includes a con-
13 tinuous range of an address space associated with said input value.

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15 8. Apparatus as in claim 5, wherein said input value includes a set of
16 routing information for at least one message.

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18 9. Apparatus as in claim 5, wherein an output of said apparatus in-
19 cludes an indicator of a routing treatment for at least one message.